

FQ5-545

17

## Claims:

1. A rate adjustment method in a receiver for use in a variable-rate CDMA (code division multiple access) communications system, comprising the steps of:

a) despreading a received baseband signal based on a predetermined symbol rate to produce at least rate-indicating data and a sequence of received correlation values;

b) determining a received symbol rate of the received correlation values from the rate-indicating data;

c) comparing the received symbol rate to the predetermined symbol rate;

d) when the received symbol rate is lower than the predetermined symbol rate, comparing a receive quality to a predetermined quality level;

e) when the receive quality is higher than the predetermined quality level, selecting at least one received correlation value from the received correlation values each corresponding to a number of symbols determined from a comparison result between the received symbol rate and the predetermined symbol rate;

f) generating a correlation value matching the received symbol rate from at least one selected correlation value; and

g) when the receive quality is not higher than the

FQ5-545

18

predetermined quality level, generating a correlation value matching the received symbol rate from the received correlation values.

2. The rate adjustment method according to claim 1,  
5 wherein the receive quality in the step (d) is determined based on a SIR (signal to interference ratio) of the received baseband signal at the step (a).

3. The rate adjustment method according to claim 1,  
10 wherein the receive quality in the step (d) is determined based on an estimated BER (bit error rate) obtained by performing error-correction decoding of the correlation value matching the received symbol rate.

4. The rate adjustment method according to claim 1,  
15 wherein the variable-rate CDMA communications system uses a spreading code of OVSF (Orthogonal Variable spreading Factor) and the predetermined symbol rate is a maximum symbol rate of a receiving channel.

5. The rate adjustment method according to claim 1,  
wherein  
20 in the step (e), only one correlation value at a predetermined symbol timing is selected from the received correlation values, and

19

6. The rate adjustment method according to claim 1,  
wherein

10           7.     The rate adjustment method according to claim 1,  
wherein  
              in the step (g), the correlation value matching the  
received symbol rate is generated by adding the received  
correlation values.

15           8.     A rate adjustment device in a receiver for use in  
a variable-rate CDMA (code division multiple access)  
communications system, comprising:

a finger circuit for despreading a received baseband  
signal based on a predetermined symbol rate to produce at least  
20 rate-indicating data and a sequence of received correlation  
values;

a rate determiner for determining a received symbol rate of the received correlation values from the rate-indicating

FQ5-545

20

data;

a rate comparator for comparing the received symbol rate to the predetermined symbol rate;

a quality comparator for comparing a receive quality  
5 to a predetermined quality level;

a controllable adder for selectively adding the received correlation values to produce a correlation value matching the received symbol rate depending on a designation signal; and

10 an addition controller for producing the designation signal instructing the controllable adder to add at least one received correlation value selected from the received correlation values each corresponding to a number of symbols determined from a comparison result of the rate  
15 comparator, when the received symbol rate is lower than the predetermined symbol rate and the receive quality is higher than the predetermined quality level.

9. The rate adjustment device according to claim 8, wherein the filter circuit produces a SIR (signal to  
20 interference ratio) of the received baseband signal, wherein the quality comparator uses the SIR as the receive quality.

10. The rate adjustment method according to claim 8, further comprising:

a decoding processor performing error-correction

T03300-99999999

FQ5-545

21

decoding of output data of the controllable adder to produce an estimated BER (bit error rate) of the correlation value data, wherein the quality comparator uses the estimated BER as the receive quality.

5           11. The rate adjustment device according to claim 8, wherein the variable-rate CDMA communications system uses a spreading code of OVSF (Orthogonal Variable spreading Factor) and the predetermined symbol rate is a maximum symbol rate of a receiving channel.

10           12. A receiver for use in a variable-rate CDMA (code division multiple access) communications system, comprising:  
            a searcher for searching for a receive timing of an effective path from a received baseband signal;  
            a finger circuit for despreadng a received baseband  
15   signal according to the receive timing based on a maximum symbol rate of a receiving channel to produce rate-indicating data, a received SIR (signal to interference ratio) of the received baseband signal, and a sequence of received correlation values;  
            and

20           a decoder for decoding the received correlation values to produce received data based on the rate-indicating data and the received SIR,  
            wherein the decoder comprises:  
            a rate determiner for determining a received symbol

FQS-545

22

rate of the received correlation values from the rate-indicating data;

a rate comparator for comparing the received symbol rate to the maximum symbol rate;

5 a quality comparator for comparing the received SIR to a reference SIR;

a correlation value addition processor for selectively adding the received correlation values to produce a correlation value matching the received symbol rate depending  
10 on a designation signal;

an effective correlation value decision section for producing the designation signal instructing the correlation value addition processor to add at least one received correlation value selected from the received correlation values  
15 each corresponding to a number of symbols determined from a comparison result of the rate comparator, when the received symbol rate is lower than the maximum symbol rate and the received SIR is higher than the reference SIR; and

a decoding processor for decoding the correlation  
20 value matching the received symbol rate to produce the received data.

13. A receiver for use in a variable-rate CDMA (code division multiple access) communications system, comprising:

a searcher for searching for a receive timing of an  
25 effective path from a received baseband signal;

FQ5-545

23

a finger circuit for desreading a received baseband signal according to the receive timing based on a maximum symbol rate of a receiving channel to produce rate-indicating data and a sequence of received correlation values; and

5 a decoder for decoding the received correlation values to produce received data based on the rate-indicating data and an estimated BER (bit error rate) obtained by performing error-correction decoding,

wherein the decoder comprises:

10 a rate determiner for determining a received symbol rate of the received correlation values from the rate-indicating data;

a rate comparator for comparing the received symbol rate to the maximum symbol rate;

15 a quality comparator for comparing the estimated BER to a reference BER;

a correlation value addition processor for selectively adding the received correlation values to produce a correlation value matching the received symbol rate depending  
20 on a designation signal;

an effective correlation value decision section for producing the designation signal instructing the correlation value addition processor to add at least one received correlation value selected from the received correlation values  
25 each corresponding to a number of symbols determined from a comparison result of the rate comparator, when the received

FQ5-545

FQ5-545

24

symbol rate is lower than the maximum symbol rate and the  
estimated BER is lower than the reference BER; and

a decoding processor performing the error-  
correction decoding of output data of the correlation value  
5 addition processor to produce the received data and the  
estimated BER.

T03250-03001